Department of Energy

ROCKY FLATS OFFICE
P O BOX 928
GOLDEN COLORADO 80402-0928

96-DOE-09354

JUL 11 1996

David J Kaunisto
Senior Water Resources Engineer
City of Westminster
4800 West 92nd Avenue
Westminster, CO 80030

Dear Mr Kaunisto,

Thank you for your comments of March 8, 1996, regarding the Operable Unit (OU) 3 Draft Remedial Facilities Investigation/Remedial Investigation (RFI/RI) Report The report has been revised and is being readied for publication In the Final Report, all of your specific comments have been incorporated We appreciate your input as it makes the report more accurate

Your general comments regarding additional risk considerations are addressed as follows

Comment 1)

Standley Lake enlargement and rehabilitation - Approximately 2 5 million cubic yards will be excavated in the area around Standley Lake and be incorporated into an enlarged or rehabilitated dam

Comment 2)

Standley Lake Park- A new park will be developed at Standley Lake, which will increase the number of visitors, be open to recreation year round, and will involve some earth work

Response

The highest radionuclide values found during the remedial investigation were used in the risk assessment These values were found just east of the Rocky Flats east gate in the remedy lands Using the highest value found in the surface soils (6 47 pCi/g), the estimated potential risk for a future hypothetical resident at this location is $3x10^{-6}$ In other words, a resident living at this location for 30 years would incur an additional 3-in-1 million chance of developing cancer over a lifetime

Risk estimates in the vicinity of Standley Lake would be much lower because the plutonium levels are very low (009 pCi/g - 215 pCi/g) Potential risks associated with recreational use of the area or construction activities are less than those for residential use because the time of exposure is much less than that of a resident Thus, while we have not specifically calculated the risks posed by the scenario you describe, we anticipate that they would be much less than $3x10^{-6}$ owing to lower plutonium concentrations and reduced exposure times

Comment 3)

Lower water levels in the lake - Standley Lake is a drinking water supply reservoir and as such will be drained significantly during an extended dry period It is likely that about 80% of the lake bottom would be exposed during such a dry period, which would last two to three years

Response

The maximum plutonium value found in the surficial sediments of Standley Lake was 0 19 pCi/g This value was found at the center of the reservoir and could only be exposed during the most extreme conditions Again, risks were calculated for the maximum values that were found in the OU, which occurred in the Great Western Reservoir sediments In an unlikely exposure scenario, risk was calculated to a resident living in the floodplain on the dried Great Western Reservoir bottom Using a plutonium value of 2 19 pCi/g, the estimated risk for this potential receptor was $9x10^{-7}$, or less than 1 (0 9)-in-1 million additional cancer induction risk If Standley Lake were to be drained and converted to residential use, the risks would be correspondingly lower than for Great Western Reservoir, and risks from exposed sediments in the non-residential scenario you describe would be lower still

Response to City of Westminster concern regarding availability of plutonium for entry into the water supply

Studies have shown that the solubility of plutonium is very low because of its preferential adsorption to clays and organics in the sediments It is not likely that changes within the relatively narrow range of environmental conditions would induce plutonium into the aqueous phase This has been borne out by the ongoing analysis of the surface waters in Standley Lake which indicate that this is not occurring As you are aware, the highest observed value for plutonium in Standley Lake surface waters during the Remedial Investigation was 0 009 pCi/l This is less than the current water quality standard of 0 03 pCi/l, and substantially less than the proposed Statewide, risk-based standard of 0 15 pCi/l

I hope these responses appropriately address your concerns If you need more information, please contact me at 966-6246

Sincerely,

John J Rampe
Environmental Restoration Liaison
Rocky Flats Field Office

cc
C Gesalman, DOE/HQ
J Kerridge, DOE/RFFO
S Slaten, DOE/RFFO
R April, DOE/RFFO